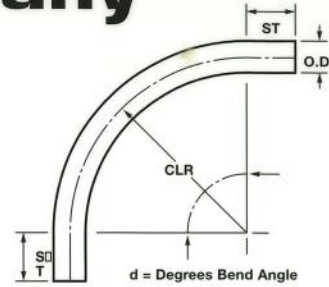


Morris Coupling Company

Tube Bending Capabilities

Pipe and tube bends of up to 180 degrees are readily available in aluminum, stainless, carbon steel and galvanized in the sizes listed below. Other centerline radii are available but not shown. Special shapes, "U" bends, offsets, and bifurcated bends available upon request. Morris tube bends are shipped from our Knoxville, Tennessee plant.



For PNEUMATIC SYSTEMS ... Short and Long Radius

| TUBE SIZE | PIPE SIZE | OUTSIDE DIAMETER | | COMMON CENTERLINE RADII (CLR) INCHES | STD. TANGENT (ST) |
|-----------|-----------|------------------|-------------|--|-------------------|
| | | INCHES | MILLIMETERS | | |
| 1" | | 1.0 | 25.4 | 3, 6, 12 | 4" |
| | 1" | 1.315 | 33.4 | 3, 5 | 4" |
| 1-1/4" | | 1.25 | 31.8 | 3, 7.25 | 4" |
| | 1-1/4" | 1.660 | 42.2 | 6.25 | 4" |
| 1-1/2" | | 1.5 | 38.1 | 2.5, 6, 7.5, 9, 12, 18, 24, 30, 36 | 4" |
| 1-3/4" | | 1.75 | 44.5 | 2.5, 8, 9, 15, 24, 30, 36, 48 | 4" |
| | 1-1/2" | 1.9 | 48.3 | 5, 6, 7.5, 9, 10, 12, 18, 24, 30, 36, 48 | 4" |
| 2" | | 2.0 | 50.8 | 2.5, 3, 3.5, 4, 5, 6, 8.5, 9, 10, 12, 18, 24, 30, 36, 48 | 4" |
| 2-1/8" | | 2.125 | 54.0 | 3, 5, 12, 24, 30, 36 | 4-1/4" |
| 2-1/4" | | 2.25 | 57.2 | 3, 9, 12, 15, 17, 24, 30, 36 | 4-1/2" |
| | 2" | 2.375 | 60.2 | 6, 7.5, 10, 12, 17, 24, 30, 36, 48 | 4" |
| 2-1/2" | | 2.5 | 63.5 | 4, 6, 9, 12, 15, 17, 24, 30, 36, 48 | 5" |
| 2-3/4" | | 2.75 | 69.9 | 2.75, 4, 17, 30, 36, 48 | 5-1/2" |
| | 2-1/2" | 2.875 | 73.0 | 12.5, 17, 24, 30, 36, 60* | 5" *18" |
| 3" | | 3.0 | 76.2 | 4, 4.5, 7.5, 9, 10, 12, 15, 18, 24, 30, 36, 48, 60* | 6" *18" |
| 3-1/4" | | 3.25 | 82.6 | 17, 30, 36 | 6-1/2" |
| 3-1/2" | 3" | 3.5 | 88.9 | 3.5, 4.5, 6, 8.75, 12, 15, 16, 18, 24, 30, 36, 48 | 7" |
| 3-3/4" | | 3.75 | 95.3 | 17, 24, 32, 36 | 7-1/2" |
| 4" | 3-1/2" | 4.0 | 101.6 | 4, 5, 6, 7.75, 10, 12, 18, 20, 24, 30, 36, 48, 60 | 8" |
| 4-1/4" | | 4.25 | 107.9 | 16, 30, 36 | 8-1/2" |
| 4-1/2" | 4" | 4.5 | 114.3 | 6, 9, 12, 16, 18, 20, 24, 30, 36, 48, 60 | 9" |
| 4-3/4" | | 4.75 | 120.7 | 36 | 9-1/2" |
| 5" | | 5.0 | 127.0 | 5.5, 7.5, 12.5, 24, 30, 36, 42, 48, 60 | 10" |
| | 5" | 5.563 | 141.3 | 20, 30, 36, 42, 48, 60, 72* | 10" *18" |
| 5-1/2" | | 5.5 | 139.7 | 30, 36 | 11" |
| 6" | | 6.0 | 152.4 | 9, 15, 24, 30, 36, 42, 48, 60, 72 | 12" |
| | 6" | 6.625 | 168.2 | 24, 30, 36, 42, 48, 60, 72 | 12" |
| 8" | | 8.0 | 203.2 | 12, 20, 32, 48, 60, 72 | 16" |
| | 8" | 8.625 | 219.1 | 24, 32, 40, 42, 48, 60, 72 | 16" |
| | 10" | 10.75 | 273.1 | 40, 48, 50 | 20" |
| | 12" | 12.75 | 323.9 | 48, 60 | 24" |

Capabilities subject to change without notice. For bends not shown on the list, please contact your sales representative.

ORDER BENDS: By O.D., wall thickness, alloy, degree of bend, centerline radius and tangent.

WALL THICKNESS: 16 ga. (.063), 14 ga. (.083), and 11 ga. (.120) in tubing. Schedules 5, 10 and 40 pipe. Other wall thicknesses on request.

MATERIALS: Aluminum is 6063-T1 extruded. Stainless is T304 ASTM A312 for pipe and T304 ASTM A249 for tubing. Carbon steel ASTM A53 for pipe; A513 for tubing. Galvanized A53 for galvanized-coated pipe and A513 for galvanized-coated tubing. Aluminized tubing is ASTM A787.

STOCK TUBE BENDS

Morris maintains an extensive inventory of tube bends available for 24-hour shipment. Most popular bend sizes are stocked in carbon steel, aluminum and stainless materials.



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Call MORRIS COUPLING for all your pneumatic conveying line needs.



PIPE DIMENSIONS AND WEIGHTS

| PIPE SIZE | O.D. IN INCHES | PIPE SCHEDULES | | | | | | | | | | | | | | | | | | | | | | |
|-----------|----------------|----------------|------------------------|---------------|------------------------|------------------------|---------------|------------------------|------------------------|------------------------|---------------|------------------------|---------------|-------------------------|---|-------------------------|-------------------------|------------------------|------------------------|---------------|--|--|--|--|
| | | 5s | 5 | 10s | 10 | 20 | + | 30 | 40s & STD. | 40 | ⊕ | 60 | 80s & E.H. | 80 | 100 | 120 | 140 | 160 | DBL. E.H. | | | | | |
| 1/8 | .405 | | .035 .1383 | .049 .1863 | .049 .1863 | | | | .068 .2447 | .068 .2447 .0850 | | | .095 .3145 | .095 .3145 .1090 | BLACK WALL THICKNESS IN INCHES RED STEEL WEIGHT PER FOOT IN POUNDS BLUE ALUMINUM WEIGHT PER FOOT IN POUNDS | | | | | | | | | |
| 1/4 | .540 | | .049 .2570 | .065 .3297 | .065 .3297 | | | | .088 .4248 | .088 .4248 .1470 | | | .119 .5351 | .119 .5351 .1850 | | | | | | | | | | |
| 3/8 | .675 | | .049 .3276 | .065 .4235 | .065 .4235 | | | | .091 .5676 | .091 .5676 .1960 | | | .126 .7388 | .126 .7388 .2560 | | | | | | | | | | |
| 1/2 | .840 | .065 .5383 | .065 .5383 .1860 | .083 .6710 | .083 .6710 .2320 | | | | .109 .8510 | .109 .8510 .2940 | | | .147 1.088 | .147 1.088 .3760 | | | | | .187 1.304 .4510 | .294 1.714 | | | | |
| 3/4 | 1.050 | .065 .6838 | .065 .6838 .2370 | .083 .8572 | .083 .8572 .2970 | | | | .113 1.131 | .113 1.131 .3910 | | | .154 1.474 | .154 1.474 .5100 | | | | | .218 1.937 .6700 | .308 2.441 | | | | |
| 1 | 1.315 | .065 .8678 | .065 .8678 .3000 | .109 1.404 | .109 1.404 .4860 | | | | .133 1.679 | .133 1.679 .5810 | | | .179 2.172 | .179 2.172 .7510 | | | | | .250 2.844 .9840 | .358 3.659 | | | | |
| 1 1/4 | 1.660 | .065 1.107 | .065 1.107 .3830 | .109 1.806 | .109 1.806 .6250 | | | | .140 2.273 | .140 2.273 .7860 | | | .191 2.997 | .191 2.997 1.037 | | | | | .250 3.765 1.302 | .382 5.214 | | | | |
| 1 1/2 | 1.900 | .065 1.274 | .065 1.274 .4410 | .109 2.085 | .109 2.085 .7210 | | | | .145 2.718 | .145 2.718 .9400 | | | .200 3.631 | .200 3.631 1.256 | | | | | .281 4.859 1.681 | .400 6.408 | | | | |
| 2 | 2.375 | .065 1.604 | .065 1.604 .5550 | .109 2.638 | .109 2.638 .9130 | | | | .154 3.653 | .154 3.653 1.264 | | | .218 5.022 | .218 5.022 1.737 | | | | | .344 7.462 2.575 | .436 9.029 | | | | |
| 2 1/2 | 2.875 | .083 2.475 | .083 2.475 .8560 | .120 3.531 | .120 3.531 1.221 | | | | .203 5.793 | .203 5.793 2.004 | | | .276 7.661 | .276 7.661 2.650 | | | | | .375 10.01 3.464 | .552 13.70 | | | | |
| 3 | 3.500 | .083 3.029 | .083 3.029 1.048 | .120 4.332 | .120 4.332 1.498 | | | | .216 7.576 | .216 7.576 2.621 | | | .300 10.25 | .300 10.25 3.547 | | | | | .438 14.32 4.945 | .600 18.58 | | | | |
| 3 1/2 | 4.000 | .083 3.472 | .083 3.472 1.201 | .120 4.937 | .120 4.937 1.720 | | | | .226 9.109 | .226 9.109 3.151 | | | .318 12.51 | .318 12.51 4.326 | | | | | .636 22.85 | | | | | |
| 4 | 4.500 | .083 3.915 | .083 3.915 1.354 | .120 5.613 | .120 5.613 1.942 | | | | .237 10.79 | .237 10.79 3.733 | | | .337 14.98 | .337 14.98 5.183 | | .438 19.00 6.560 | | | .531 22.51 7.786 | .674 27.54 | | | | |
| 4 1/2 | 5.000 | | | | | | | | .247 12.54 | | | | .355 17.61 | | | | | | | | | | | |
| 5 | 5.563 | .109 6.349 | .109 6.349 2.196 | .134 7.770 | .134 7.770 2.688 | | | | .258 14.62 | .258 14.62 5.057 | | | .375 20.78 | .375 20.78 7.188 | | .500 27.04 9.353 | | | .625 32.96 11.40 | .750 38.55 | | | | |
| 6 | 6.625 | .109 7.585 | .109 7.585 2.624 | .134 9.290 | .134 9.289 3.213 | | | | .280 18.97 | .280 18.97 6.564 | | | .432 28.57 | .432 28.57 9.884 | | .562 36.39 12.59 | | | .719 43.35 15.67 | .864 53.16 | | | | |
| 7 | 7.625 | | | | | | | | .301 23.54 | | | | .500 38.04 | | | | | | | .875 63.08 | | | | |
| 8 | 8.625 | .109 9.914 | .109 9.914 3.429 | .148 13.40 | .148 13.40 4.635 | .250 22.36 7.735 | .175 5.463 | .277 24.70 8.543 | .322 28.55 | .322 28.55 9.878 | | .406 35.64 12.33 | .500 43.39 | .500 43.39 15.01 | .594 50.95 17.60 | .719 60.71 20.97 | .812 67.76 23.44 | .906 74.79 25.84 | .875 72.42 | | | | | |
| 9 | 9.625 | | | | | | | | .342 33.91 | | | | .500 48.73 | | | | | | | | | | | |
| 10 | 10.75 | .134 15.19 | .134 15.19 5.256 | .165 18.65 | .165 18.70 6.453 | .250 28.04 9.698 | .279 10.79 | .307 34.24 11.34 | .365 40.48 | .365 40.48 14.00 | | .500 54.74 18.93 | .500 54.74 | .594 64.43 22.25 | .719 77.03 26.61 | .844 82.29 | 1.000 104.1 | 1.125 115.6 | 1.000 104.1 | | | | | |
| 11 | 11.75 | | | | | | | | .375 45.56 | | | | .500 60.08 | | | | | | | | | | | |
| 12 | 12.75 | .156 21.07 | .165 22.18 | .180 24.16 | .180 24.16 8.359 | .250 33.38 11.55 | .375 17.14 | .330 43.77 15.14 | .375 49.56 | .375 49.56 18.52 | .500 22.63 | .562 73.15 25.31 | .500 65.42 | .688 88.63 30.62 | .844 107.3 | 1.000 125.5 | 1.125 136.7 | 1.312 160.3 | 1.000 125.5 | | | | | |
| 14 | 14.00 | .156 23.07 | | .188 27.73 | .250 36.71 45.61 | .312 45.61 | | .375 54.57 | .375 54.57 63.44 | .438 63.44 | | .594 85.05 29.09 | .500 72.09 | .750 106.1 130.9 | .938 130.9 150.8 | 1.094 150.8 170.2 | 1.250 170.2 189.1 | 1.406 189.1 | | | | | | |
| 16 | 16.00 | .165 27.90 | | .188 31.75 | .250 42.05 52.27 | .312 52.27 | | .375 62.58 | .375 62.58 82.77 | .500 82.77 | | .656 107.5 136.6 | .500 82.77 | .844 136.6 164.8 | 1.031 164.8 192.4 | 1.219 192.4 223.6 | 1.438 223.6 245.3 | 1.594 245.3 | | | | | | |
| 18 | 18.00 | .165 31.43 | | .188 35.76 | .250 47.39 58.94 | .312 58.94 | | .438 82.15 | .375 70.59 104.7 | .562 104.7 | | .750 138.2 170.9 | .500 93.45 | .938 170.9 208.0 | 1.156 208.0 244.1 | 1.375 244.1 274.2 | 1.562 274.2 308.5 | 1.781 308.5 | | | | | | |
| 20 | 20.00 | .188 39.78 | | .218 46.05 | .250 52.73 78.60 | .375 78.60 | | .500 104.1 | .375 78.60 123.1 | .594 123.1 | | .812 166.4 208.9 | .500 104.1 | 1.031 208.9 256.1 | 1.281 256.1 296.4 | 1.500 296.4 341.1 | 1.750 341.1 379.2 | 1.969 379.2 | | | | | | |

TUBING DIMENSIONS

| TUBE GAUGE | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 1/8 | 10 | 9 | 5/32 | 8 | 7 | 3/16 | 6 | 5 | 4 | 1/4 | 2 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| WALL THICK. | .049 | .058 | .065 | .075 | .083 | .095 | .109 | .120 | .125 | .134 | .148 | .156 | .165 | .180 | .188 | .203 | .220 | .238 | .250 | .280 |



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